Professionals and experts in the field of emergency management agree that there is a positive correlation between public awareness and positive disaster outcomes. They also recognize their limitations as responders, especially compared to a well-informed citizenry that prepares and provides for the safety of its own families and neighbors.

Despite the importance of preparedness, because of its many challenges, education is often of secondary importance among state and local officials. Measuring public education results, for example, can be difficult and costly, but necessary to justify sustained or increased financial support from elected officials. Similarly, governments may not have the time or resources to develop the educational tools to influence public action.

Nevertheless, data collected from recent disasters such as the 2004 tsunami in Southeast Asia and the 2005 hurricane season indicate that public education should be a higher priority, and that opportunities exist to better educate the public, coordinate messages, and initiate social change. A survey conducted in September 2005, by the *Washington Post*, Kaiser Family Foundation, and Harvard University highlighted the need for better public education before disaster. Among other results, the survey of 680 adults who were evacuated from the Gulf Coast to Houston after Hurricane Katrina found:

- 73% said they heard that an evacuation order had been given before Katrina hit;
- 66% of those who heard an evacuation message/order said it gave clear information about how to evacuate, yet 61% did not evacuate before the storm hit.

Of those who did not evacuate before the storm:

- 64% said they did not think the storm and its aftermath would be as bad as it was;
- 42% said they waited too long;
- 55% said they did not have a car or a way to leave;
- 22% said they were physically unable to leave; about the same number said they had to care for someone who was physically unable to evacuate;
- 37% said they just did not want to leave.

One might think that hurricanes Katrina and Rita would have served as a wake-up call for residents everywhere to begin disaster preparations. A study by the Council for Excellence in Government and the American Red Cross suggests otherwise: surprisingly, people are not making additional preparations or familiarizing themselves with local or state emergency plans. Approximately 38% of people surveyed across the country said the hurricanes did not motivate them to prepare for an emergency, while 24% said the hurricanes provided some motivation. Although the results of the survey vary by region, the overall findings are disheartening and suggest that important work is needed to change prevailing attitudes and behaviors.

Somewhat paradoxically, there is a wealth of research on effective crisis communication, and public educational materials exist on most government Web sites. In fact, an Emergency Management Accreditation Program (EMAP) working group of experts recently identified at least 40 Web sites and publications as "best practices." Missing, however, is a comprehensive review of practices and resources and identification of components that make up an effective disaster public education program. In other words, there are no benchmarks that state and local emergency management programs can use to assess the adequacy of their public awareness efforts.

In partnership with the Alfred P. Sloan Foundation, EMAP has conducted research, convened experts, and developed a framework for public education standards. This yearlong effort brought together a broad group of stakeholders to identify content that should be included in national standards for any disaster public education program.

Components of an Effective Public Education Program

In developing its standard for "Crisis Communication, Public Education and Information," EMAP identified five specific steps that would constitute an effective public education program:

Step 1: Develop a public education strategic plan based on outcomes from the hazard identification and risk assessment process.

The first step in the public education process is to figure out what hazards pose significant risk. Analysis of historical data is one method of identifying who is at risk for what hazard, but new hazards mapping and geographic information systems are also significantly improving risk assessment and the identification of vulnerable populations. For example, in 2002 the University of South Carolina's Hazards Research Lab conducted a vulnerability analysis across that state by combining data about the frequency of hazards with social vulnerability metrics such as age, population, income, and other indicators. The overlap of this data with historical information about the occurrences of hurricanes, tornados, floods, and other hazards resulted in a total hazard probability of occurrence for counties across the state. Similar mapping tools could help identify vulnerable populations that would benefit from public education efforts.

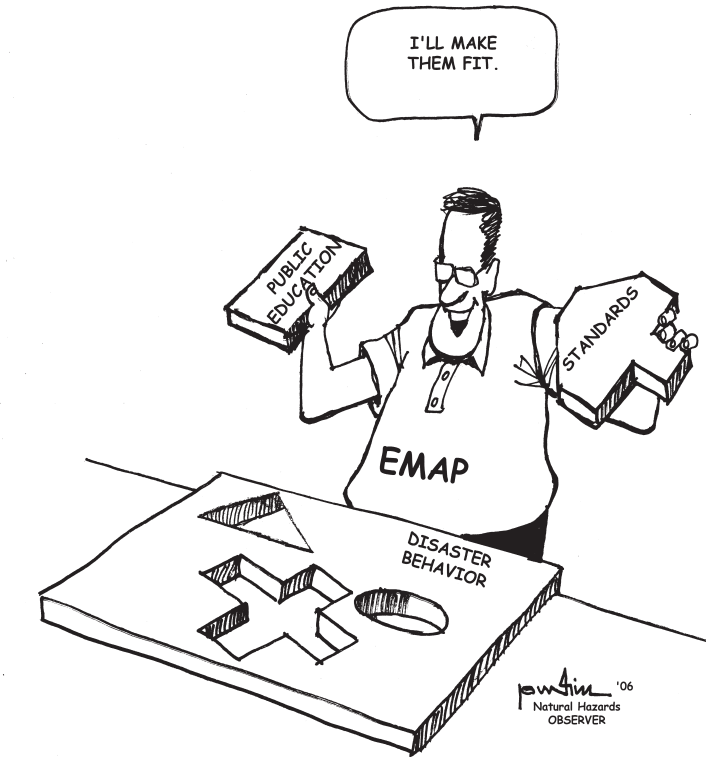
Of course, any hazards identification and risk assessment process should be reviewed and updated regularly to address emerging threats. In 2001 and 2002, for

example, public officials hurried to warn citizens about the threat of mailed anthrax spores. Public education was needed not only to respond to this new threat but also to fears and misinformation generated among the public.

Step 2: Identify the audience and appropriate communications media to maximize the reach, frequency, and consistency of the message.

The next step in public education is determining who needs to get the message and how to deliver it. The target audience for a given message may be all citizens in a state, county, or community, or a small segment of that population. For example, instructions for responding to warnings and incidents may vary between the general public and people with special considerations, such as disabled persons, the elderly, non-English speakers, and those with vision, hearing, and cognitive impairments.

Public education officials must also take into account differences between residents of urban and rural areas when identifying target audiences. Although city residents benefit from robust media coverage, they face some unique risks. For example, dense critical infrastructure and population make urban areas likely targets for terrorists. On the other hand, response in rural areas presents many challenges, including search and rescue and the provision of emergency medical care to victims of disasters distributed across wide areas. Therefore, rural residents may need to be prepared to care for themselves well beyond 72 hours—the time span generally recommended by emergency management experts. As a result, the messages and special instructions for residents in rural areas will almost certainly be different than those for city dwellers.



Determining how to deliver messages is important once the target audience is identified. For common messages, television, radio, and print are conventional methods of delivery. However, material should also be made available in alternative formats, such as in Braille and on cassette, for people with disabilities.

The use of the Internet to share disaster information with residents is becoming more commonplace. For example, to help prepare citizens in the San Francisco Bay area for a devastating earthquake, power outages, acts of terrorism, and other hazards, the San Francisco Office of Emergency Services recently launched an innovative Web site—www.72hours.org—that provides specific guidance for preparing children, the elderly and disabled, and pets for the first 72 hours after a disaster.

Although computer media are being used more and more, both the fragility of such media and their limited use in rural areas and by some segments of the population make it essential that a mix of new and traditional media be used to ensure that all people are aware of their risks.

Step 3: Identify and engage public education stakeholders.

Educating the public about hazards involves more than posting information on the Internet and working with the news media. EMAP's working group suggests that programs identify and engage many different groups of stakeholders when developing and disseminating messages. Businesses and industries, for example, can serve as effective conduits for sharing disaster information with their employees. School systems can help educate children and young adults about hazards in their areas and appropriate preparation and response (see the Invited Comment in this *Observer*). Other government agencies and community organizations can also be important partners in public education.

Additionally, it is critically important that the creators and disseminators of disaster education materials get to know media contacts before disasters occur. Involving the media in training sessions and exercises is one way to build such relationships. Making members of the media part of a jurisdiction's advisory committee or Local Emergency Planning Committee could also provide benefits; with their knowledge and expertise, these individuals could help strengthen emergency operations plans and provide valuable feedback during exercises. A process should be in place to engage these and other key stakeholders in the development and implementation of a public education program.

Step 4: Develop clear and concise messages that are based on the jurisdiction's hazards and risks.

Once hazards are identified and the means of communication selected, public officials must develop the message in coordination with key stakeholders. The EMAP working group suggests the following when crafting message programs:

- Engage stakeholders and technical expertise in message development;
- Identify and articulate objectives and guidance;
- Keep the message simple;
- State the message as a call to action;
- Tailor and personalize the message to the audience;
- Provide sufficient explanation ("Why should I care?");
- Make the message as positive and empowering as possible; and
- Test the message.

Messages to be delivered during a crisis can be planned as well. Although there may be circumstances when officials will need to develop messages from scratch, there are many examples of existing communications regarding various types of hazards. In August 2004, the National Disaster Education Coalition released *Talking about Disasters: Guide for Standard Messages*. This guide presents facts about common hazards and risk information in a simple, comprehensible manner for the public. This reference also contains example messages tailored for each type of hazard that could be used by public officials, the media, and other stakeholders.

Step 5: Ensure the sustainability of the plan.

Public education needs to be a long-term, permanent part of state and local emergency management programs. Resources for public education should be included in yearly emergency management budgets to sustain a base level of public outreach. These funds can be supplemented with external grants and donations.

Once developed and implemented, it is important to evaluate the impact of the plan on citizen awareness and preparedness through polls, post-disaster surveys, and other quantitative and qualitative methods. This data should help identify areas for improvement and justify continued and increased financial support with elected officials. Like the budgetary process, the public education planning and implementation process is cyclical, and requires constant assessment and enhancements. The EMAP working group recommends that the entire process take place at least every two or three years to stay current with changing hazards and populations and to incorporate new methods of delivery. Moreover, this frequency allows programs to make changes based on real-world incidents and evaluations.

Conclusion

It appears that the public may be more informed about hazards today than in the past. Through the Internet and other media, people have access to much disaster information, while global media now bring disasters from around the world into American living rooms every day. Research indicates, however, that citizen preparedness for all types of hazards remains a low priority and inadequate—even after one of the nation's worst natural disasters, Hurricane Katrina.

Government officials responsible for public safety and security know the challenge well: In order to get citizens to prepare, you first must get them to care. Increasing citizen awareness and concern about how disasters might affect them and their loved ones, neighbors, and friends requires renewed thinking about how public education is conducted across the country at all levels of government. There may be better ways, for example, to use the Internet and global events to stimulate preparedness actions at the state and local levels.

The EMAP working group identified three opportunities that should be considered by state, local, and federal officials responsible for public education:

- Establishing a national framework for public education that includes a single national vision and clear connection among local, state, and federal responsibilities. A national vision that recognizes the importance of public education and individual understanding of disaster preparedness should be developed. Making it clear in Urban Areas Security Initiative (UASI) and other grant guidance that public education activities are allowable expenses will help establish disaster public education as a priority.
- Bridging the gap between sociological and psychological research on disaster public education and policy and implementation in the field. There is a significant disconnect between emergency management practice and social science research. Informative studies often become lost in academia; more systems are needed to communicate findings to practitioners. Likewise, public officials may not know how or have the time to translate academic resources and findings into practice.
- Developing standards for and hosting workshops on disaster public education. The components of the public education program outlined above should be added to the EMAP standard as supplemental guidance and further reviewed for inclusion in that document. Furthermore, the content should form the basis for regional or state-level workshops on developing disaster public education programs.

With information on citizen preparedness collected after Hurricanes Katrina and Rita and given the current salience of disaster preparedness, it is a propitious time to seek support for and make improvements in public disaster awareness. The guidance outlined above provides state and local officials with benchmarks for assessing the adequacy of such public education efforts.

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Resources

For more information about EMAP and the disaster public education and information project, visit: **www.emaponline.org**, or e-mail Nicole Ishmael, EMAP, Nishmael@csg.org.